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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/715,631 | 11/18/2003 | Aly M. Ismail | 19308.0028U1 | 4330 |
| 35856 | 7590 | 10/05/2005 | EXAMINER | |
| SMITH FROHWEIN TEMPEL GREENLEE BLAHA, LLC | | | TRAN, PABLO N | |
| P.O. BOX 88148 | | | ART UNIT | |
| ATLANTA, GA 30356 | | | PAPER NUMBER | |

2685

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,631

Applicant(s)

ISMAIL, ALY M.

Examiner

Pablo N. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vignali et al. (5,327,580) and in view of Morita (6,008,691).

As per claims 1 and 16, Vignali et al. teaches a method for filtering a receive signal in a wireless transceiver having a modulator, an up-converter, a transmitter, a direct conversion receiver including an amplifier and a filter (see fig. 1), wherein the filter comprising a frequency dependent negative resistance (FDNR) so that noise generated by the filter is prevented from appearing on the received signal at a first frequency (fig. 2A & 2C, col. 7/ln. 64-col. 8/ln. 11).

Vignali et al. do not explicitly suggest such filtering by applying a single voltage-to-current and a single current-to-voltage conversion. However, such is well known in the art as suggested by Morita (col. 3/ln. 39-col. 4/ln. 29, col. 5/ln. 47-col. 7/ln.43). Therefore, it would have been obvious to one of ordinary skill in the art to provide such configuration to the filter configuration of Vignali et al. in order to effectively remove unwanted signals.

As per claims 2 and 18, the modified filter apparatus Vignali et al. teaches that noise generated by the filter means appears on the received signal at a second frequency (col. 7/ln. 25-50).

As per claim 17, the modified filter apparatus Vignali et al. teaches first frequency is the in-band received frequency (col. 7/ln. 64-col. 8/ln. 11).

As per claim 19, the modified filter apparatus Vignali et al. teaches the second frequency is the out-of-band receive frequency (col. 7/ln. 25-50).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified filter apparatus of Vignali et al. in view of Regan (4,185,150).

As per claims 3, 4, 6 and 11, as stated above in claim 1, the modified filter apparatus Vignali et al. does not suggest the FDNR implement using a general impedance converter (GIC) to realize a bi-quad filter. However, Regan suggested such implementation (col. 2/ln. 32-45). Therefore, it would have been obvious to one of ordinary skill in the art to provide method as suggest by Regan to the FDRN of the modified filter apparatus Vignali et al. et al. to provide and effectively utilizes such wide passive and active impedance range.

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As per claims 7 and 12, the modified filter apparatus Vignali et al. further disclose a pair of operation amplifiers and at least one capacitance (see Vignali et al., fig. 2A & 2C, col. 7/ln. 64-col. 8/ln. 11, see Regan, col. 3/ln. 47-col. 4/ln. 3).

As per claims 5, 8 and 13, the modified filter apparatus Vignali et al. further disclose the first frequency is the in-band received frequency (see Vignali et al., col. 7/ln. 64-col. 8/ln. 11).

As per claims 9 and 14, the modified filter apparatus Vignali et al. further disclose that noise generated by the filter means appears on the received signal at a second frequency (see Vignali et al., col. 7/ln. 25-50).

As per claims 10 and 15, the modified filter apparatus Vignali et al. further disclose the second frequency is the out-of-band receive frequency (see Vignali et al., col. 7/ln. 25-50).

Response to Arguments

5. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lofmark (2001/0019608), Morita (6,008,691), Tanigawa et al. (5,182,522), Greaves et al. (4,686,486), Cheng et al. (4,001,735), McGuire (3,984,639) disclose such filtering arrangements.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

May 22, 2005

**PABLO N. TRAN
PRIMARY EXAMINER**


